

What is claimed:

1. A water reclamation system for removing odors, bacteria and particulates from a flow of wastewater to produce clean water for re-use, comprising:

5 ozone generator means for ozonating a flow of wastewater to remove odors and bacteria;

particulate filtering means for pre-filtering said flow of ozone treated wastewater by separating heavier particulates out of said wastewater;

10 electrostatic filter means for electrostatically filtering said flow of pre-filtered wastewater to remove finer particulates; and

clean water holding tank means for storing cleaned water received from said electrostatic filter means for re-use.

15 2. The water reclamation system of claim 1 wherein said ozone generator means comprises:

an air filter for mechanically removing particulates from ambient air;

ionizer means for converting oxygen, contained in a flow of said filtered ambient air, into ozone to produce ionized, filtered air; and

20 mixing means for injecting said ionized, filtered air into said flow of wastewater to remove odors and bacteria.

3. The water reclamation system of claim 2 wherein said ionizer means comprises:

25 ultraviolet lamp means for exposing said flow of said filtered ambient air to ultraviolet light to convert oxygen contained in a flow of said filtered ambient air into ozone.

4. The water reclamation system of claim 2 wherein said mixing means comprises:

30 a Venturi that creates a pressure differential causing a suction to extract the ozone from said ionizer means and inject the ozone into said flow of wastewater.

5. The water reclamation system of claim 1 wherein said particulate filtering means comprises:

a cyclone mixer/cleaner to remove heavier particulates from said flow of ozone treated wastewater.

6. The water reclamation system of claim 5 further comprising:

5 a process tank wherein said ozone treated wastewater is returned to atmospheric pressure and ozone continues to work to destroy odors and bacteria.

7. The water reclamation system of claim 6 further comprising:

10 a filter feed pump to mechanically pump said ozone treated wastewater out of said process tank and into said electrostatic filter means.

8. The water reclamation system of claim 1 wherein said electrostatic filter means comprises:

a filter tank having input and output ports;

15 a layer of gravel distributed in the bottom of said filter tank;

a layer of glass bead media overlaying said layer of gravel; and

20 intake means connected to said input port for distributing said ozone treated wastewater over said glass bead media to remove fine particulates from said ozone treated wastewater as said ozone treated wastewater flows from said input port to said output port.

9. The water reclamation system of claim 8 wherein said electrostatic filter means further comprises:

25 electrode means for applying an electric charge to said glass bead filtering media to cause fine particulates in said flow of pre-filtered wastewater to be electrostatically attracted to said glass bead media.

10. The water reclamation system of claim 9 wherein said electrostatic filter means further comprises:

30 automatic backwash means to clean collected fine particles from said glass bead media to rejuvenate said glass bead media.

11. A method of reclaiming waste water to remove odors, bacteria and particulates from a flow of wastewater to produce clean water for re-use, comprising:

ozonating a flow of wastewater to remove odors and bacteria;

pre-filtering said flow of ozone treated wastewater by separating heavier particulates out of said wastewater;

5 electrostatically filtering said flow of pre-filtered wastewater to remove finer particulates; and

storing cleaned water received from said step of electrostatic filtering in a holding tank for re-use.

10 12. The method of reclaiming waste water of claim 11 wherein said step of ozone generating comprises:

mechanically removing particulates from ambient air;

converting oxygen, contained in a flow of said filtered ambient air, into ozone in an ozonator apparatus to produce ionized, filtered air; and

15 injecting said ionized, filtered air into said flow of wastewater to remove odors and bacteria.

13. The method of reclaiming waste water of claim 12 wherein said step of converting comprises:

20 exposing said flow of said filtered ambient air to ultraviolet light to convert oxygen contained in a flow of said filtered ambient air into ozone.

14. The method of reclaiming waste water of claim 12 wherein said step of injecting comprises:

25 creating a pressure differential using a venturi to cause a suction to extract the ozone from said ozonator apparatus and inject the ozone into said flow of wastewater.

15. The method of reclaiming waste water of claim 11 wherein said step of pre-filtering comprises:

30 removing heavier particulates from said flow of ozone treated wastewater using a cyclonic mixer/filter.

16. The method of reclaiming waste water of claim 15 further comprising:
returning said ozone treated wastewater to atmospheric pressure in a process tank.

17. The method of reclaiming waste water of claim 16 further comprising:
mechanically pumping said ozone treated wastewater out of said process tank to
electrostatically filter said ozone treated wastewater.

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18. The method of reclaiming waste water of claim 11 wherein said step of
electrostatically filtering comprises:

generating a flow of said ozone treated wastewater into a filter tank having input
and output ports, a layer of gravel distributed in the bottom of said filter tank, a layer of
10 glass bead media overlaying said layer of gravel and intake connected to said input
port for distributing said ozone treated wastewater over said glass bead media to
remove fine particulates from said ozone treated wastewater as said ozone treated
wastewater flows from said input port to said output port.

15 19. The method of reclaiming waste water of claim 18 wherein said step of
electrostatically filtering further comprises:

applying an electric charge to said glass bead filtering media to cause fine
particulates in said flow of pre-filtered wastewater to be electrostatically attracted to
said glass bead media.

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20. The method of reclaiming waste water of claim 19 wherein said step of
electrostatically filtering further comprises:

automatically backwashing said glass bead media to clean collected fine
particles from said glass bead media to rejuvenate said glass bead media.

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